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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,017	03/23/2004	Zihua Guo	MS1-1888US	5704

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EXAMINER	
RYMAN, DANIEL J	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No.	Applicant(s)	
	10/808,017	GUO ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2616	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Daniel J. Ryman*. (3)_____.

(2) *John C Meline (Reg. No. 58,280)*. (4)_____.

Date of Interview: *08 January 2008*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Odman (US 2003/0152059)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Daniel Ryman
Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant proposed amending paragraph [0028] of the Specification to include ref. 300. Examiner agreed that this would overcome the objection to the drawings. Applicant proposed amending claim 1 and canceling claim 7 in response to the rejection under 35 USC 101. Examiner agreed that these amendments would overcome the rejection of claim 7 under 35 USC 101. Applicant inquired whether the proposed amendments to the claims would overcome the cited prior art since the cited prior art does not contain a smoothing factor. Examiner agreed that the proposed amendments would overcome the cited prior art. However, Examiner cautioned that the amendments to claim 4 create an issue under 35 USC 112, second paragraph, since the limitation "the smoothing factor" has two antecedent bases. Applicant agreed to resolve this issue before filing a formal Response.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)

Serial Number	10/808,017
Confirmation Number	5704
Filing Date	Mar 23, 2004
Title of Application	Bandwidth Allocation
First Named Inventor	Zihua Guo
Assignee	Microsoft Corporation
Group Art Unit	2616
Examiner	DANIEL J RYMAN
Attorney Docket Number	MS1-1888US
Nature of this Document	Informal Communication in Preparation for Scheduling an Examiner Interview

To: Examiner RYMAN
Fax: (571) 273-3152

From: John C Meline
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(Tel. 509-324-9256; Fax 509-323-8979)

Dear Examiner RYMAN:

[0001] This communication provides an agenda for a phone interview of this matter. My assistant will be contacting you to schedule an interview. If you would prefer to schedule the interview, then please contact my assistant or me directly. Our contact info is on the signature page of this document. Thank you in advance for talking with me about this matter.

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Interview Agenda:

- Discussion of drawing amendments;
- Discussion of §101 rejection;
- Discussion of differences between the claims amended as supported by the application and the cited references.

Drawing Amendments

[0002] I would like to discuss whether an amendment to paragraph 0028 would overcome the objection to Figure 3. Specifically, I would like to amend paragraph 0028 to include the unintentional omission of the number 300 in reference to the overall sequence diagram.

[0003] If this proposed amendment will not overcome the current drawing objection, I would like to discuss suggestions you may have for additional amendments that would overcome it.

Section 101

[0004] I would like to discuss whether or not proposed amendments to claims 1, et al., and the concomitant canceling of claim 7 would overcome the §101 rejection of claim 7. Specifically, I would change the language of claim 1 to read " " instead of directing claims to "transmission media."

[0005] If these proposed amendments will not overcome the current §101 rejection, I would like to discuss suggestions you may have for additional amendments that would overcome the current §101 rejection.

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Differences Between the Application and the Cited References

[0006] The Application describes allocating bandwidth based upon various factors including a smoothing factor. The smoothing factor is more particularly defined in claim 4 as amended.

[0007] The primary reference cited in the Office Action is Odman; other references cited include Crisler et al., and Wibowo et al.

[0008] The allocation of bandwidth described in the Application differs from the allocation described in the cited reference because the Application discloses the use of a smoothing factor in determining the units to allocate in a given superframe.

[0009] With specific reference to the amended claims, it does not appear that the cited references disclose the following elements of amended claim 1:

> determining an allocated bandwidth amount for the stream of the entity based on the unserviced bandwidth amount and responsive to the bandwidth allocation request and a **smoothing factor**.

[0010] Instead, the references merely describe various schemes to assign the available bandwidth based on the amount of bandwidth currently or previously requested.

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Proposed Amendments

[0011] Please see the attached Appendix of Proposed Claim Amendments. I would like to discuss your opinion regarding the proposed amendments in light of the currently cited references.

[0012] Thank you in advance for scheduling time for this interview. I look forward to talking to you.

Respectfully Submitted,

Dated: January 3, 2008 By:_____

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Appendix of Claims with Proposed Amendments

1. (Currently Amended) One or more ~~processor-accessible~~ storage media comprising processor-executable instructions that, when executed, direct a device to perform actions comprising:

receiving from an entity a bandwidth allocation request stipulating a requested bandwidth amount for a stream of the entity for a current superframe;

~~ascertaining an unserviced bandwidth amount of the stream of the entity from a previous superframe; and~~

determining an unserviced bandwidth amount from a previous superframe;

determining an allocated bandwidth amount for the stream of the entity based, at least in part, on the unserviced bandwidth amount ~~and responsive to the bandwidth allocation request~~ and a smoothing factor.

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2. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 1, comprising the processor-executable instructions that, when executed, direct the device to perform a further action comprising:

transmitting an allocation broadcast that includes the allocated bandwidth amount to the entity.

3. (Canceled)

4. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in ~~claim 3~~ claim 1, comprising the processor-executable instructions that, when executed, direct the device to perform a further action comprising:

updating a reserved bandwidth amount of the stream of the entity for the current superframe using a newly-arrived bandwidth amount, a previous reserved bandwidth amount of the stream of the entity from the previous superframe, and a smoothing factor, the smoothing factor modulating how quickly the reserved bandwidth amount changes from one superframe to another.

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5. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 1, wherein the action of receiving comprises an action of:

receiving the bandwidth allocation request via a wireless communication.

6. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 1, wherein the action of ascertaining comprises an action of:

retrieving from memory the unserviced bandwidth amount.

7. (Canceled)

8. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 1, wherein the action of determining comprises an action of:

assigning at least one bandwidth unit to the unserviced bandwidth amount.

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9. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 8, wherein the at least one bandwidth unit comprises at least one time unit.

10. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 8, wherein the action of determining further comprises an action of:

assigning at least one bandwidth unit to a reserved bandwidth amount of the stream of the entity.

11. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 10, wherein the action of determining further comprises an action of:

assigning at least one bandwidth unit to an overloaded bandwidth amount of the stream of the entity after the assigning of the at least one bandwidth unit to the unserviced bandwidth amount and to the reserved bandwidth amount.

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12. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 11, comprising the processor-executable instructions that, when executed, direct the device to perform a further action comprising:

combining the at least one bandwidth unit assigned to the unserviced bandwidth amount, the at least one bandwidth unit assigned to the reserved bandwidth amount, and the at least one bandwidth unit assigned to the overloaded bandwidth amount into an allocated bandwidth amount comprising a time slot to be allocated to the stream of the entity for the current superframe.

13. (Currently Amended) The one or more ~~processor-accessible~~ storage media as recited in claim 10, comprising the processor-executable instructions that, when executed, direct the device to perform a further action comprising:

detecting if an available bandwidth resource for the current superframe has been exhausted after the action of assigning at least one bandwidth unit to the reserved bandwidth amount of the stream of the entity;

if not, assigning at least one bandwidth unit to an overloaded bandwidth amount of the stream of the entity.

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14. (Currently Amended) A device comprising:

at least one processor; and

one or more media including processor-executable instructions that are capable of being executed by the at least one processor, the processor-executable instructions adapted to direct the device to perform actions comprising:

receiving from an entity a bandwidth allocation request stipulating a requested bandwidth amount for a stream of the entity for a current superframe;

ascertaining an unserviced bandwidth amount of the stream of the entity from a previous superframe; and

determining an allocated bandwidth amount for the stream of the entity based on the unserviced bandwidth amount and ~~responsive to the bandwidth allocation request~~ a smoothing factor.

15. (Original) The device as recited in claim 14, wherein the device further comprises:

a transceiver that is adapted to transmit and receive wireless communications and is capable of facilitating the action of receiving from an entity a bandwidth allocation request.

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16. (Original) The device as recited in claim 14, wherein the entity comprises at least one of a user or another device.

17. (Original) The device as recited in claim 14, wherein the requested bandwidth amount for the current superframe includes the unserviced bandwidth amount from the previous superframe without separately designating the unserviced bandwidth amount.

18. (Original) The device as recited in claim 14, wherein the ascertaining action comprises:

retrieving the unserviced bandwidth amount from the one or more media.

19. (Original) The device as recited in claim 14, wherein the device is capable of operating under an IEEE 802.15.3 standard in accordance with a time division multiple access (TDMA) technology.

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20. (Original) The device as recited in claim 14, wherein the processor-executable instructions are adapted to direct the device to perform a further action comprising:

segmenting the requested bandwidth amount into a newly-arrived bandwidth amount of the stream of the entity and the unserviced bandwidth amount;

wherein the determining action comprises:

assigning a number of bandwidth units equaling the unserviced bandwidth amount prior to assigning any bandwidth units to the newly-arrived bandwidth amount.

21. (Original) The device as recited in claim 20, wherein the processor-executable instructions are adapted to direct the device to perform a further action comprising:

assigning at least one bandwidth unit to an unserviced bandwidth amount of another stream of another entity prior to assigning a bandwidth unit to the newly-arrived bandwidth amount of the stream of the entity.

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22. (Original) The device as recited in claim 14, wherein the determining action comprises:

assigning at least one bandwidth unit to the unserviced bandwidth amount first;

assigning at least one bandwidth unit to a reserved bandwidth amount of the stream of the entity second;

computing an overloaded bandwidth amount of the stream of the entity by subtracting the unserviced bandwidth amount and the reserved bandwidth amount from the requested bandwidth amount; and

assigning at least one bandwidth unit to the overloaded bandwidth amount third if any bandwidth units remain available.

23. (Original) The device as recited in claim 14, wherein the processor-executable instructions are adapted to direct the device to perform further actions comprising:

calculating the unserviced bandwidth amount for the previous superframe when determining an allocated bandwidth amount for the stream of the entity for the previous superframe; and

retaining, from the previous superframe to the current superframe, the unserviced bandwidth amount using the one or more media for utilization in the action of ascertaining.

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24. (Currently Amended) A method for bandwidth allocation, the method comprising:

receiving from multiple entities for multiple streams current bandwidth allocation requests stipulating current requested bandwidth amounts for the multiple streams of the multiple entities;

segmenting the current requested bandwidth amounts into current newly-arrived bandwidth amounts and previous unserviced bandwidth amounts associated with the multiple streams of the multiple entities;

assigning bandwidth units to the previous unserviced bandwidth amounts;

detecting if available bandwidth units have been consumed in the assigning; and

if available bandwidth units have not been consumed in the assigning, assigning the available bandwidth units to the current newly-arrived bandwidth amounts according to current reserved bandwidth amounts for the multiple streams of the multiple entities <u>based on a smoothing factor</u>.

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25. (Original) The method as recited in claim 24, further comprising:

if available bandwidth units have been consumed in the assigning, calculating current unallocated bandwidth amounts for the multiple streams of the multiple entities and noting the current unallocated bandwidth amounts for subsequent use in segmenting subsequent requested bandwidth amounts.

26. (Original) The method as recited in claim 25, further comprising:

detecting if remaining available bandwidth units have been consumed in the two assignings; and

if not, assigning the remaining available bandwidth units to current overloaded bandwidth amounts of the multiple streams of the multiple entities in ascending order.

27. (Original) The method as recited in claim 24, further comprising:

updating previous reserved bandwidth amounts for the multiple streams of the multiple entities to create the current reserved bandwidth amounts using at least the current newly-arrived bandwidth amounts.

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28. (Original) The method as recited in claim 24, further comprising:

calculating current unserviced bandwidth amounts for the multiple streams of the multiple entities by deducting assigned bandwidth units of one or more assignments from the current requested bandwidth amounts.

29. (Original) The method as recited in claim 24, wherein the bandwidth units comprise time units; and

further comprising:

combining assigned bandwidth units of one or more assignments into allocated time slots for the multiple streams of the multiple entities; and

sending positions and durations of the allocated time slots for the multiple streams to the multiple entities in at least one allocation broadcast.

30. (Original) One or more processor-accessible media comprising processor-executable instructions that, when executed, direct a device to perform the method as recited in claim 24.

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31. (Currently Amended) An arrangement for bandwidth allocation, comprising:

ascertainment means for ascertaining respective previous unserviced bandwidth amounts associated with respective streams; and

determination means for determining respective current allocated bandwidth amounts for the respective streams based on the ascertained respective previous unserviced bandwidth amounts and a smoothing factor.

32. (Original) The arrangement as recited in claim 31, further comprising:

transceiver means for transceiving wireless communications;

wherein the transceiver means comprises:

receiving means for receiving from respective entities respective bandwidth allocation requests stipulating respective current requested bandwidth amounts for the respective streams; and

transmission means for transmitting to the entities at least one allocation broadcast including the determined respective current allocated bandwidth amounts for the respective streams.

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33. (Original) The arrangement as recited in claim 32, wherein the determination means further determines the respective current allocated bandwidth amounts for the respective streams responsive to the respective bandwidth allocation requests stipulating the respective current requested bandwidth amounts.

34. (Original) The arrangement as recited in claim 31, further comprising:

segmentation means for segmenting respective current requested bandwidth amounts into respective current newly-arrived bandwidth amounts and the ascertained respective previous unserviced bandwidth amounts;

wherein the determination means comprises:

assignment means for assigning bandwidth amounts to the ascertained previous unserviced bandwidth amounts prior to the current newly-arrived bandwidth amounts.

35. (Original) The arrangement as recited in claim 34, wherein the assignment means further assigns available bandwidth amounts to the current newly-arrived bandwidth amounts prior to respective current overloaded bandwidth amounts of the respective streams; and

wherein the determination means further comprises:

detection means for detecting if a time resource of assignable bandwidth amounts is exhausted;

wherein the assignment means ceases assigning bandwidth amounts if the time resource of assignable bandwidth amounts is detected as being exhausted by the detection means.

36. (Canceled)

37. (New) One or more storage media containing instructions that, when executed, direct a device to allocate bandwidth by:

ascertaining respective previous unserviced bandwidth amounts associated with a plurality of streams; and

determining respective current allocated bandwidth amounts for the respective streams based on the ascertained respective previous unserviced bandwidth amounts and a smoothing factor.